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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/691,038

10/21/2003

Peter G. Webb

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AGILENT TECHNOLOGIES, INC.
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Intellectual Property Administration
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EXAMINER

LIN, JERRY

ART UNIT

PAPER NUMBER

1631

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,038	Applicant(s) WEBB ET AL.	
	Examiner JERRY LIN	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 6, 2008 has been entered.

Furthermore, in light of the Applicant's arguments and in light of newly discovered art, the species requirement in the office action mailed August 24, 2007 is now withdrawn. Instant claims 46 and 47 are rejoined with the elected claims.

Status of the Claims

Claims 21- 48 are under examination.

Claim Rejections - 35 USC § 112, 2nd Paragraph

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-36 and 46-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 part (b) is unclear because it is unclear what the function of the processor is. The instant claims recites "a processor which . . . a corrected pattern different from the target drive pattern" Clarification via clearer claim language is requested. Claims 22-36 and 46-48 are also rejected for depending from claim 21.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 21-24 and 26-48 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

While claims 21-24 and 26-48 are drawn to an apparatus or a computer program, the apparatus or computer program are embodiments of a computational method. Thus instant claims are drawn to a process involving the judicial exception of a computational algorithm. Claims drawn to a judicial exception is non-statutory unless the claims include a practical application of that judicial exception as evidenced by a physical transformation of matter, or if the claimed invention recites a useful, tangible and concrete final result. In the instant claims, there is no physical transformation by the claimed invention, thus the Examiner must determine if the instant claims produce a useful, tangible, and concrete final result. See MPEP 2106.

Claims 21-24, 26-44, and 46-48 do not produce a useful, concrete, and tangible final result. A useful, concrete, and tangible final result requirement requires that the claim must set forth a practical application of the mathematical algorithm to produce a

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real-world result. The instant claims are drawn to an apparatus that performs a method that derives a corrected drive pattern upon sensing an error. However, deriving a corrected drive pattern does not necessarily require a tangible result. Rather, deriving a corrected drive pattern only requires the processor manipulate data. Thus the instant claims do not require that a tangible result must be produced. Examples of amendments to overcome this rejection include amending the claims to identify/recite a concrete result and to recite that the result is outputted to a display or to a user or outputted in a user readable format. However, applicant is reminded that any amendment must be fully supported and enabled by the originally filed disclosure.

Regarding claims 40-45, the instant claims are drawn to a computer program. However, a computer program is a listing of instructions which does not belong to one of the statutory classes defined in 35 U.S.C. §101. Thus, the instant claims are non-statutory.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 21-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard (WO 98/41531) in view of Gutmann et al. (Transducers, Solid-State Sensors, Actuators and Microsystems, 12th International Conference (June 2003) Volume 1, pages 364-367).

The instant claims are drawn to an apparatus for fabricating an addressable array of biopolymer probes which includes a sensor that views droplets previously dispensed from a dispensing head and senses errors between the target array pattern and the actual array pattern deposited, and a processor which uses the error to produce a corrected drive pattern that reduces the discrepancy between the target and actual array patterns.

Regarding claims 21, 25- 27, 29, 30, 37, 39, and 40-45, Blanchard teaches an apparatus for fabricating an addressable array of biopolymer probes on a substrate (page 6, lines 10-14) which includes a sensor which senses at least one operating parameter for an error which would result in producing a discrepancy between the target array pattern and actual pattern deposited (page 7, lines 10-30; pages 62-64; pages 75-76); and a processor (page 7, lines 27-30) which corrects the drive pattern to reduce

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the discrepancy between the target and actual array patterns (page 77, lines 5-25).

Furthermore, Blanchard teaches that their method is automated (or a computer program product) with position control for deposition (page 7, lines 10-30) which indicates a memory with a target drive pattern or corrected drive pattern.

However, Blanchard does not teach where the sensor views a dispensing head or nozzle or capturing one or more images of the droplet pattern.

Regarding claims 21, 24, 32, 36- 38, 40, and 46-48, Gutmann et al. teaches a method for verifying the accuracy of producing microarrays by using a sensor that views a nozzle or dispensing head (page 365, right column) and viewing droplet patterns previously dispensed from the head and capturing images of the pattern (imaging the droplets as well as measuring dispense volume of the whole 24 position array) (page 365, right column).

Regarding claims 22- 24, 28, 31- 36, and 38, Blanchard teaches an apparatus with a dispensing head and a transport system (page 56, line 24-page 57, line 24), wherein the drive pattern controls the operation of the transport system (page 57, lines 3-5), and the operating parameter is the position of the substrate and the sensor views the substrate (pages 62-64; pages 75-76).

It would have been obvious to one of ordinary skill in the art, at the time of the invention to combine the methods of Gutmann et al. and Blanchard for the benefit of being able to test the quality of Blanchard's microarrays. While Blanchard teaches a method of producing microarrays, Gutmann et al. provides a method of verifying the consistency of these microarrays and detecting any errors in these microarrays. Thus,

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one of ordinary skill in the art would have been motivated to combine these methods to use the automated system of Blanchard and verifying the quality of the microarrays by using the method taught by Gutmann et al.

Withdrawn Rejections

7. Applicant's arguments and amendments, filed June 6, 2008, with respect to the rejections made under 35 U.S.C. §112 1st paragraph as new matter and 35 U.S.C. §102 as being anticipated by Blanchard have been fully considered and are persuasive. Applicants have provided support in the specification to overcome the rejection of new matter. Blanchard do not teach the amendments of capturing one or more images of a droplet pattern. These rejections have been withdrawn.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY LIN whose telephone number is (571)272-2561. The examiner can normally be reached on 7:00-5:30pm, M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on (571) 272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry Lin/
Examiner, Art Unit 1631
8/12/08